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Patent

IN THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 2. This sheet replaces the original sheet. In this sheet, transmission queue 138 has been renumbered as 139.

Attachment: Replacement Sheet

REMARKS

Applicants have carefully reviewed the Office Action dated October 12, 2005, the cited references, and the reasons for rejection of the claims. Reconsideration and allowance are respectfully requested in view of the following.

The above amendments to the drawings and specification are submitted to remove various typographical informalities. These changes are respectfully asserted not to introduce new matter, and their entry is respectfully requested.

Response to Rejections under Section 103

In the Office Action dated October 12, 2005, Claims 1-13 and 15 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Petty (U.S. Patent No. 6,615,215), in view of Chu et al. (U.S. Patent Application No. 2002/0123966).

As described in Paragraphs [0005] and [0006] of the present application, diagnosing problems in a queue-based messaging system by testing individual queues would be a laborious and time consuming task, particularly if the queue-based messaging system had many queues. Accordingly, many queue-based messaging systems are equipped with an interface, such as MQ Series messaging software, which enables a network administrator to review the queues themselves. However, the network administrator/message queue interface has not been ideally designed to enable the network administrator to readily identify and rectify problems in the message queues in the manner taught in the present application. For example, while the MQ Series messaging software is equipped with a message queue interface ("MQI") through which a series of administrative functions may be executed, such administrative functions operate on a queue-level. Using the MQI, the network administrator is able to review the status of a selected queue but cannot simultaneously review the status of plural queues. Thus, if a problem develops at the serving platform due to a problem within one of the message queues maintained thereat, the network administrator must review the functioning of each queue to locate the problem queue. Furthermore, the administrative tools available to the network administrator through the MQI are not particularly well configured to diagnose problems within a queue. Oftentimes, upon selecting a queue for examination, the network administrator must parse through pages of

information related to the selected queue before the administrator is able to determine whether the queue is functioning properly or improperly.

As a solution to these problems, the present inventions provide a tool by which a network administrator may readily identify and rectify queuing problems within a queue-based messaging system used for the exchange of messages between client and server processes or computer platforms of a computer network by enabling the network administrator to simultaneously review selected information regarding selected queues of the queue-based messaging system at the network-level. To that end, the claim language of the present application is as follows:

Amended Claim 1 now recites, "a system for monitoring said queue-based messaging system, said monitoring system allowing a user to select at least two of said plurality of queues and at least two of said plurality of attributes describing one or more of said plurality of queues and generating a display which includes a current value for said selected attributes for each one of said selected queues described thereby."

Claim 1 has been amended to clarify that the methods and systems of the present application allow a user, such as a network administrator, to select not only the queues but also the attributes he or she would like to monitor. The Office Action appears to suggest that Petty discloses such an element. However, the sections of Petty cited in support of this suggestion state as follows:

The messages transferred to the message transfer system 30 are placed into one of a plurality of queues 35. As messages are placed into the queues 35, or arrive from other systems, various event messages may be generated. These event messages include trigger messages 40, which are stored in one of a plurality of initiation queues 45, and performance event messages 50, which are stored in a performance event queue 55. In general, there are more queues 35 than initiation queues 45, such that each initiation queue preferably services a plurality of queues 35. The performance event queue 55 passes the performance event messages 50 to an event relay 60. The event relay 60 takes the performance event messages 50 from the performance event queue 55 and transfers them to the initiation queue 45 corresponding to the queue 35 generating the performance event message 50. The trigger messages, as well as the performance event messages passed by the event relay 60, that are stored in the initiation queues 45 are passed to a respective one of a plurality of trigger event processors 65. Each instance of an initiation queue 45 corresponds with a respective one of the trigger event processors 65. (col. 5, lines 10-30).

selectively adjusting the low threshold when the depth of the queue equals or exceeds the high threshold. (col. 10, lines 1-2).

setting a high threshold of a depth of the queue to a first value;
setting a low threshold of a depth of the queue to a second value lower than the first value;
detecting when the depth of the queue equals or exceeds the high threshold; (col. 9, lines 58-64).

If the resource was included as an item in a management display panel, the visual representation of the resource may, for example, change its color to red when in an alertable state, and then back to green when the state returns to normal. When the alertable state is displayed, computer operations procedures may be invoked as a response to the state with the intent of returning the resource to a normal state. (col. 3, lines 6-14).

As established by the above sections of Petty cited in the Office Action, Petty relates to a system and method for adjusting the processing of messages according to changes in queue depth. Petty is an **alert system** that monitors queue depth as a process to automatically take action or send an alert. The system of the present application is designed to use monitoring as a **diagnostic tool** that not only allows a user to identify potential problems before they become problems but also to more efficiently understand and isolate causes and resolutions to problems once they have been identified. Petty does not teach such a diagnostic tool, and as a result, it does not provide the flexibility, control, or display elements taught by the systems and methods of the present application. Rather, Petty is designed as a limited and different solution and, thus, does not smoothly apply to the problem that the present application is trying to address in the way that it is trying to address it.

Accordingly, Applicants respectfully submit that Petty does not appear to teach or suggest allowing a user to select certain queues, among a plurality of queues, to monitor. The queues monitored by the method and system of Petty appear to be static.

Petty also appears to allow the user to monitor only the queue depth. It does not appear to allow the user to monitor any other attribute. Accordingly, Applicants also respectfully submit that Petty does not appear to teach or suggest allowing the user to select certain attributes, among a plurality of attributes, to monitor.

The system and method of Petty also appear to display only the state, e.g. alertable or normal, of a resource. It does not appear to display the current value of selected attributes.

By contrast, the methods and systems of the present application allow a user to identify message failures by allowing the user to select the queues, as well as the attributes, that he or she determines to be helpful in identifying message failures. A display is then generated from the selected queues and attributes. The methods and systems of the present application are described, for example, as follows:

- [0033] Referring next to Figure 3, a method of monitoring a messaging system used to exchange messages between computing platforms of a computer network will now be described in greater detail. The method commences at step 200 and, at step 202, the messaging API 138 is used to request the queue manager 126 to retrieve, from the messaging application database 140, the names of the queues being managed thereby. For example, invoking an MQINQ call to a NAMELIST object in MVS/ESA would cause the MQ Series messaging software to retrieve the names of the queues being maintained by the queue manager 126. At step 204, those queues to be monitored are selected from the list of queues provided by invoking the MQINQ call to the NAMELIST object ...
- [0034] Proceeding on to step 206, plural attributes to be monitored for each of the selected local initiation queues 134-1 through 134-X are selected. Generally, an attribute describes a characteristic of a queue. While the attributes which are used to describe a queue may vary, for queues established using the MQ Series messaging software, the attributes set forth below are used to describe all queues.
- [0035] DefPersistence(MQLONG)
Default message persistence. ...
- [0036] DefPriority (MQLONG)
Default message priority ...
- [0037] InhibitGet (MQLONG)
Controls whether get operations for this queue are allowed. ...
- [0038] InhibitPut (MQLONG)
Controls whether put operations for this queue are allowed. ...
- [0039] QDesc (MQCHAR64)
Queue description. ...
- [0040] QName (MQCHAR48)
Queue name. ...
- [0041] QType (MQLONG)
Queue type. ...
- [0042] Scope (MQLONG)
Controls whether an entry for this queue also exists in a cell directory. ...
- [0043] In addition to the attributes set forth above, local queues are described using a number of additional attributes. These additional attributes are set forth below.
- [0044] BackoutRequestQName (MQCHAR48)
Excessive backout request queue name. ...

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- [0045] BackoutThreshold (MQLONG)
Backout threshold. ...
- [0046] CreationDate (MQCHAR12)
Date this queue was created. ...
- [0047] CreationTime (MQCHAR8)
Time this queue was created. ...
- [0048] CurrentQDepth (MQLONG)
Current queue depth. ...
- [0049] DefinitionType (MQLONG)
Queue definition type. ...
- [0050] DefInputOpenOption (MQLONG)
Default input open option. ...

(Paragraphs [0051] to [0082] list additional attributes.)

- [0083] In selecting those attributes to be monitored for the selected queues, it is contemplated that various attributes may be selected and that the various attributes may include attributes common to all types of queues or unique to specific types of queues. ...
- [0084] Continuing on to step 208, a network monitoring table 250 is constructed from the selected queues and selected attributes. ...
- [0086] Proceeding on to step 210, the messaging API 138 issues one or more MQINQ calls to the queue manager 126 to acquire the current values of the selected attributes for the selected queues.
- [0087] At step 214, the network administrator may analyze the network monitoring table 250 to identify messaging failures in the queue-based messaging system. More specifically, messaging failures may be identified for messages exchanged between a selected client computer platform and the server computer platform 102 by examining the selected attributes for the local initiation queue corresponding to the selected client computer platform.

(Emphasis added by Applicants.)

Accordingly, Applicants respectfully submit that Petty does not teach or suggest a system for monitoring a queue-based messaging system that allows a user to select at least two of a plurality of queues and at least two of a plurality of attributes describing one or more of said plurality of queues and generating a display which includes a current value for said selected attributes for each one of said selected queues described thereby.

Dependent Claims 2-9 depend directly or indirectly from independent Claim 1 and incorporate all of the limitations thereof. Accordingly, for the reasons established above, Applicants respectfully submit that Claims 1-9 are not obvious in light of the suggested combination and respectfully request allowance of these claims.

With regard to Claim 10, the Examiner has stated that Claim 14 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. Applicants have amended Claim 10, the independent claim from which Claim 14 directly depends, as suggested by the Examiner and respectfully request allowance of this claim along with its dependent Claims 11-13.

Claim 15 recites, "generally simultaneously displaying said value for each one of said at least one attribute for all of said plurality of queues."

As established above, Petty appears to display only the state, e.g. alertable or normal, of a resource. It does not appear to display the value of at least one attribute. Accordingly, Applicants respectfully submit that Petty does not teach or suggest generally simultaneously displaying the value for each one of at least one attribute for all of a plurality of queues. Therefore, for all of the reasons established above, Applicants respectfully submit that Claim 15 is not obvious in light of the suggested combination and respectfully request allowance of this claim.

In the Office Action dated October 12, 2005, Claims 16 and 17 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Petty (U.S. Patent No. 6,615,215), in view of Chu et al. (U.S. Patent Application No. 2002/0123966), and further in view of Cloud et al. (U.S. Patent No. 5,634,127).

Dependent Claims 16 and 17 depend directly or indirectly from independent Claim 15 and incorporate all of the limitations thereof. Accordingly, for the reasons established above, Applicants respectfully submit that these claims are not obvious in light of the suggested combination and respectfully request allowance of these claims.

Allowable Subject Matter

In the Office Action dated October 12, 2005, Claim 14 was objected to as being dependent upon a rejected base claim.

Applicants appreciate the Examiner's indication of the allowability of this claim. As stated earlier, the Examiner has stated that Claim 14 would be allowable if rewritten in

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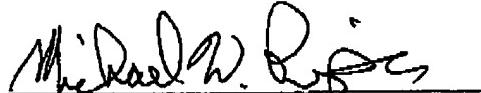
independent form including all of the limitations of the base claim and any intervening claim. Applicants have amended Claim 10, the independent claim from which Claim 14 directly depends, as suggested by the Examiner and respectfully request allowance of this claim along with its dependent Claims 11-13.

Conclusion

Applicants respectfully submit that the present application is in condition for full allowance for the reasons stated above, and Applicants respectfully request such allowance. If the Examiner has any questions or comments or feels it would be helpful in expediting the application, the Examiner is encouraged to telephone the undersigned at (972) 731-2288. This correspondence is intended to be a complete response to the Office Action dated October 12, 2005.

The Commissioner is hereby authorized to charge payment of any further fees associated with any of the foregoing papers submitted herewith, or to credit any overpayment thereof, to Deposit Account No. 21-0765, Sprint.

Respectfully submitted,



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